claims 1-14 and 16-23. These claims define patentable subject matter and are deserving of allowability. Accordingly, applicants respectfully request favorable reconsideration, entry of the attached papers and formal allowance.

The drawings filed June 11, 2001, have been objected to by both the examiner and the Official Draftsperson. Paragraph 10 of the Office Action summary explicitly states, "Applicant may not request that any objection to the drawing(s) be held in abeyance." Applicants accordingly understand that new drawings must be submitted at least for approval at the present time. Accordingly, attached hereto are new drawings for review and approval. Applicants respectfully request feedback as to whether or not these new drawings are acceptable.

Moreover, if the attached drawing submitted for approval are fully acceptable, applicants request that they be entered as new drawings in place of the original drawings so that another duplicate set need not be later filed.

Claims 1-3, 5-7, 9-11, 14 and 16-20 have been again rejected as anticipated under Section 102 by Harmer. This rejection is again respectfully traversed.

The main claim in this application is claim 1. All other claims depend either directly or indirectly from claim

1, and thus incorporate the subject matter thereof.

Accordingly, applicants hereby focus on claim 1.

Thus, the heating as called for in claim 1 is:

> ... carried out under the condition that abnormal grain growths are induced at the interface between the polycrystal and the seed single crystal and are repressed inside the polycrystal.

This is subject matter which is not disclosed by Harmer and is not inherent in Harmer.

To support applicants' position in this regard, attached herewith is evidence in the form of Prof. Lee's declaration. It is a fact that Harmer does not mention abnormal grain growth and does not control abnormal grain growth, and therefore cannot anticipate claim 1 and the claims which depend therefrom.

Attention is first respectfully invited to the bottom paragraph on page 2 of the attached declaration of Dr. Lee, an expert in this art, where the following is stated:

> I have carefully studied the Harmer patent, and it does not at all mention abnormal grain growth, and it does not relate to the control of abnormal grain growth. It is a fact that the Harmer patent does not disclose what we do, how we do it, and the results we achieve, ...

It is a fact that Harmer does not mention abnormal grain growth and does not show or suggest how to control abnormal grain growth.

Harmer does disclose forming a single crystal by bonding a seed crystal to a polycrystalline structure, and heating. However, as stated in the top paragraph on page 3 of Prof. Lee's attached declaration, "Such a technique as disclosed in the Harmer [patent] is not a able to produce consistent reliable results". The basic Harmer method is "too slow", and "when abnormal grain growth appears, it is uncontrolled" (second paragraph on page 3 of the attached declaration of Dr. Lee).

The last part of applicants' claim 1, quoted above, specifies that abnormal grain growth is induced at the interface, but "repressed inside the polycrystal". There is not the remotest inference, let alone any disclosure, in Harmer of inducing abnormal grain growth at the interface while repressing it inside the polycrystal. Attention is invited to the second paragraph on page 4 of the attached declaration of Prof. Lee:

> As stated at the end of the second paragraph on page 6 of our above-identified U.S. patent application, success is achieved according to our invention by inducing abnormal grain growth at the interface between the polycrystal and the seed single crystal, but repressing abnormal grain growth inside the polycrystal. It is a fact

> that there is no hint of this in the Harmer patent.

A rejection under Section 102 cannot validly be based on silence in a reference, i.e. such a rejection cannot be based on what a reference does not disclose, unless the subject matter is inherent in the reference. Harmer neither discloses subject matter which anticipates claim 1, nor is such inherent in Harmer. Prof. Lee's declaration, e.g. see especially the paragraph spanning pages 5 and 6 thereof, explains why applicants' claimed subject matter is not inherent in Harmer.

Thus, as a matter of fact, Harmer does not disclose heating "carried out under the condition that abnormal grain growths are induced at the interface between the polycrystal and the seed single crystal and are repressed inside the polycrystal", and such heating is not inherent in the disclosure of Harmer.

As a matter of law, inherency must be reasonably certain. For example, please see *In re Brink*, 164 USPQ 247, 249:

> Absent a showing [by the PTO] of some **reasonable certainty** of inherency, the rejection... under 35 U.S.C. 102 must fail. (emphasis added)

Also see *Ex parte Cyba*, 155 USPQ 756, 757 (1967), and *In re Oelrich*, 212 USPQ 323, 326 (1981).

There is no reasonable certainty that the heating disclosed and/or carried out in Harmer inherently induces abnormal grain growth at the interface between the polycrystal and the seed single crystal while repressing abnormal grain growth inside the polycrystal; and indeed Dr. Lee's declaration proves the contrary. Therefore, inherency in Harmer is neither inevitable nor reasonably certain, and inherency (which does not exist in Harmer) cannot be relied upon.

Applicants respectfully request withdrawal of the rejection.

Claims 4, 8, 12 and 13 have been again rejected under Section 103 as being obvious from Harmer. This rejection is again respectfully traversed.

Claims 4, 8, 12 and 13 all depend ultimately from claim 1, and therefore incorporate the subject matter of claim 1. Harmer has been shown above to be fundamentally deficient with respect to what is recited in claim 1, and is therefore fundamentally deficient with respect to what is recited in claim 4, 8, 12 and 13 which incorporate the subject matter of claim 1.

As there is not the remotest suggestion in Harmer, or any other known prior art, there is accordingly nothing in existence (insofar as is known) which would have led the

person of ordinary skill in the art to modify Harmer in any way so as to achieve what is called for in claim 1, let alone in claims 4, 8, 12 and 13. The modifications necessary to convert Harmer into any of claims 1, 4, 8, 12 or 13 can only be found in applicants' specification which was not available to the person of ordinary skill in the art at the time the present invention was made.

Applicants respectfully request withdrawal of the rejection.

Claims 21-23 have been again rejected under Section 103 as obvious from Harmer in view of Kingery. This rejection is again respectfully traversed.

As with the other dependent claims, claims 21-23 ultimately depend from and incorporate the subject matter of claim 1. Kingery has not been cited to make up for the aforementioned deficiencies of Harmer, and indeed does not do so. Therefore, even if the combination were obvious (not conceded by applicants), the resultant reconstruction of Harmer based on such proposed combination would not correspond to the subject matter of claim 1, let alone claims 21-23.

Withdrawal of the rejection is in order and is respectfully requested.